

## *New software helps emergency planners assist people with special needs*

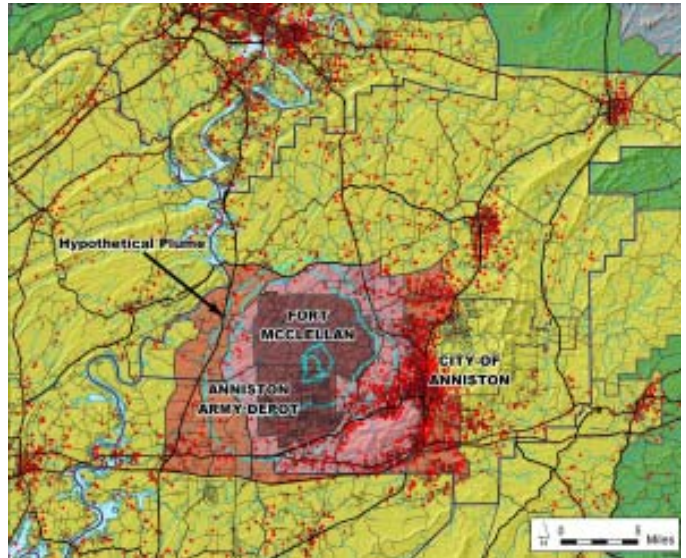
Emergency preparedness planners will be able to better prepare individuals with special needs thanks to new open-source software developed at the U.S. Department of Energy's Argonne National Laboratory.

The new Special Population Planner software is designed as an extension to commercial Geographic Information Systems software, and is available for no charge online at [sourceforge.net/projects/spc-pop-planner](http://sourceforge.net/projects/spc-pop-planner).

The software provides a database for creating a list of individuals with special needs throughout a given emergency planning area. Individuals with special needs include the physically, mentally and medically disabled, those without transportation and latchkey children.

The project began in 1998 with funding from the U.S. Army under the Chemical Stockpile Preparedness Program for the seven areas across the country where chemical weapons are stored. These areas have emergency evacuation plans for neighboring residents, and Argonne researchers were asked to gather data and develop software to help identify and plan for individuals with special needs at the Anniston Army Depot site near Anniston, Ala. The study covered most of a six-county area with 115,000 households and 275,000 residents, of whom about 9 percent reported special needs.

The next step was to learn who these individuals are, where they are located, and what special requirements they have, said Ed Tanzman, who led the project for Argonne's Decision and Information Sciences Division. Registrations were collected through annual direct-mail solicitations, supported by advertising and telephone contacts. In Anniston, local officials recognized that first responders would be unable to rescue every registered person in case of emergency. Instead, they decided to help make these people more self-reliant by offering them adapted protective equipment, training and services.



Map shows the project area nearest to the Anniston Army Depot, which stores lethal, obsolete weapons awaiting safe destruction and disposal. A hypothetical airborne plume is depicted in light blue, and red points represent hypothetical locations of people with special needs. Argonne's Special Population Planner software can help emergency managers to better understand and prepare for the unique needs of people with special needs, for a variety of natural or man-made emergencies.

"Hurricane Katrina highlighted the national problem of emergency planning for persons with special needs, when a number of residents — many disabled persons or their caregivers — were trapped for days at the Superdome because of evacuation problems," Tanzman said. "During Hurricane Rita, a couple of weeks later, 44 assisted-living-facility residents were being evacuated on a motorcoach when it caught fire, killing 23. These events made it clear to the public that those who are disabled and disadvantaged are at great risk during emergencies. Specialized plans are needed to help them become better able to implement such protective actions as sheltering or evacuation.

“With the U.S. Census Bureau estimating that up to 19 percent of the population is disabled,” Tanzman said, “the Army recognized a need to make this software available to all emergency planners, not just those near Anniston Army depot. Using the Argonne-developed software, emergency planners for any area can begin building a database of persons with special needs and developing emergency response or evacuation plans to accommodate them.”

The underlying ArcView GIS software is used by many emergency planning organizations for mapping and generating emergency response plans, as a way of compiling relevant data very quickly. The Argonne-developed Special Population Planner enhances that capability. More information about the Special Population Planner can be found at [www.dis.anl.gov/ep/publications/sppublications.html](http://www.dis.anl.gov/ep/publications/sppublications.html).

The software is also being used on an experimental basis for other special needs populations. For example, a group in Pennsylvania is using the software to build a database of Alzheimer's disease patients in their coverage area.

The Chemical Stockpile Emergency Preparedness (CSEP) Program is a wide-ranging activity that supports a national initiative involving the U.S. Army Chemical Materiel Command, the Federal Emergency Management Agency, nine states and 37 counties. The CSEP Program was established in 1988 to enhance emergency planning for the unlikely event of a release of hazardous chemical weapons agent from one of the Army's seven chemical weapons storage installations. These obsolete weapons are scheduled to be destroyed, but meanwhile they pose a threat to installation workers and residents of the surrounding communities in the unlikely event of a release.

In addition to the Special Population Planner, Argonne's CSEP Program includes a variety of

components that serve the needs of multiple program participants. Among the major activities are:

- Development of the Synchronization Matrix Planning Process and tool to facilitate integration of multi-jurisdictional emergency plans;
- Systemization of real-time meteorological data collection, modeling and quality control from weather towers at the Army's storage installations;
- Preparation of guidance for creating inter-organizational and inter-jurisdictional memoranda of understanding and memoranda of agreement to enable mutual assistance and other forms of special support to emergency responders;
- Planning for and support of CSEP emergency exercises, including the development of the Exercise Management Tool;
- Development of a wide array of emergency risk communication plans and products; and
- Preparation and delivery of training programs in such areas as risk communication, emergency planning, and emergency exercises.

The program is part of Argonne's Decision and Information Sciences Division, which has been supporting federal, state, local and tribal agencies for almost three decades. Argonne continues to develop and apply new methodologies and technologies supporting emergency preparedness. Such support has increased the capabilities of emergency managers, planners and responders to counter technological disasters, natural disasters and other emergency situations.

By using interdisciplinary knowledge, Argonne has developed and implemented new methods for systems-based emergency planning, training and emergency exercises.

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